

Amendment to the Claims

3242

We claim:

1. (currently amended) An additive composition ~~comprising~~ selected from the group consisting of a dispersant and an antioxidant wherein the antioxidant is selected from the group comprising the antioxidants include, but are not limited to, alkyl-substituted phenols such as 2, 6-di-tertiary butyl-4-methyl phenol, phenate sulfides, phosphosulfurized terpenes, sulfurized esters, aromatic amines, and hindered phenols, is a hindered, ester-substituted phenol and combinations thereof; and

wherein the dispersant is selected from the group comprising ashless type dispersants such as Mannich dispersants; polymeric dispersants; carboxylic dispersants amine, dispersants, high molecular weight esters, and the like succinics; esterfied maleic anhydride styrene copolymers; maleated ethylene diene monomer copolymers; surfactants; emulsifiers; ashless succinimide, polyisbutenyl succinimide, substituted long chain alkenyl succinimides, high molecular weight esters, N-substituted long chain alkenyl succinimides, decyl methacrylate, vinyl decyl ether, aminoalkyl acrylates, acrylamides, poly-(oxyethylene)-substituted acrylates, high molecular weight olefins with monomers containing polar substitutes; functionalized derivatives of each component listed herein; and combinations thereof; used in an application selected from the group ~~comprising~~ consisting of decreasing the amount of soot in a lubricating oil of an engine, decreasing the amount of emissions in an engine's exhaust and combinations thereof.

2. (original) The composition of claim 1 wherein the emissions reduced are selected from the group comprising soot, hydrocarbons and/or NOx.

3. (original) The composition of claim 1 further comprises at least one lubricant additive selected from the group comprising detergents, overbased detergents, carbon black, silica, alumina, titania, magnesium oxide, calcium carbonate, lime, clay, zeolites, extreme pressure (EP) agents, wear reduction agents, viscosity index improvers, anti-foaming agents, friction reducing agents, anti-misting agents, cloud-point depressants, pour-point depressants, mineral and/or synthetic oils mixtures thereof and combination thereof and in the range of about 0 % to about 95 % of the additive composition.

4. (original) The composition of claim 1 wherein the dispersant is in the range of about 0.1 % to about 95 % and the antioxidant is in the range of about 0.01 % to about 99 % of the additive composition.

5. (canceled)

6. (canceled)

7. (original) The composition of claim 1 wherein the dispersant is selected from the group comprising ashless succinimide, polyisbutenyl succinimide, substituted long chain alkenyl succinimides, high molecular weight esters, mannich dispersants, N-substituted long chain alkenyl succinimides, carboxylic dispersants, amine dispersants, polymeric dispersants, decyl methacrylate, vinyl decyl ether, aminoalkyl acrylates, acrylamides, poly-(oxyethylene)-substituted acrylates, high molecular weight olefins with monomers containing polar substitutes and mixtures thereof; and an antioxidant selected from the group comprises alkyl-substituted phenols, 2, 6-di-tertiary butyl-4-methyl phenol, phenate sulfides, phosphosulfurized terpenes and mixtures thereof.

8. (original) A process comprising contacting a portion of an engine oil with an additive composition of claim 1 resulting in the reduction of soot in the engine oil and/or emissions in an engine exhaust.

9. (original) The process of claim 8 wherein the additive composition is positioned to contact the oil in an area selected from the group comprising full flow oil, bypass of oil, in the reservoir and combinations thereof.

10. (original) The process of claim 8 wherein the additive composition is located in an area selected from the group comprising a filter, a drain pan, an oil bypass loop, a canister, a housing, a reservoir, a pocket of a filter, a canister in a filter, a mesh in a filter, a canister in a bypass system, a mesh in a bypass system and combinations thereof.

11. (original) The process of claim 8 wherein the additive composition is in contact with the engine oil in the range of about 100% to 1% of the engine oil.

12. (original) The process of claim 8 wherein the additive composition is positioned in a location of flow rate of the engine oil in the range of greater than 1% to about 100% of the circulating engine oil.

13. (original) The process of claim 8 wherein the emissions reduced in the exhaust are selected from the group comprising soot, NOx, hydrocarbons and combinations thereof.

14. (original) The process of claim 8 comprising adding to the engine oil the additive composition all at the same time, a portion of the components over its service life, continuously to the engine oil over the service life of the oil and combinations thereof.

15. (original) The process of claim 18 wherein the composition further comprises at least one lubricant additive selected from the group comprising detergents, overbased detergents, carbon black, silica, alumina, titania, magnesium oxide, calcium carbonate, lime, clay, zeolites, extreme pressure (EP) agents, wear reduction agents, viscosity index improvers, anti-foaming agents, friction reducing agents, anti-misting agents, cloud-point depressants, pour-point depressants, mineral and/or synthetic oils mixtures thereof and combinations thereof.

16. (original) the process of claim 15 wherein the dispersant is in the range of about 0.01% to about 60%, the antioxidant is in the range of about 0.01% to about 60% and the lubricant additive is in the range of about 9% to about 60% of the additive composition.

17. (currently amended) An oil filter for an engine oil lubricating system comprising a housing, a filter for removing particulate matter from an oil bypass filter and a container with an additive composition wherein the additive composition comprises a dispersant and an antioxidant and wherein antioxidant is selected from the group comprising the antioxidants include but are not limited to alkyl-substituted phenols such as 2, 6-di-tertiary butyl-4-methyl phenol, phenate sulfides, phosphosulfurized terpenes, sulfurized esters, aromatic amines, and hindered phenols, is a hindered, ester-substituted phenol and combinations thereof; and

wherein the dispersant is selected from the group comprising ashless type dispersants such as Mannich dispersants; polymeric dispersants; carboxylic dispersants, amine dispersants, high molecular weight esters, and the like; succinics, esterfied maleic anhydride styrene copolymers; maleated ethylene diene monomer copolymers; surfactants; emulsifiers; ashless succinimide, polyisbutenyl succinimide, substituted long chain alkenyl succinimides, high molecular weight esters, N-substituted long chain alkenyl succinimides, decyl methacrylate, vinyl decyl ether, aminoalkyl acrylates, acrylamides, poly-(oxyethylene)-substituted acrylates, high molecular weight olefins with monomers containing polar substitutes; functionalized derivatives of each component listed herein; and combinations thereof; and

results in the reduction of one of the following from an engine soot, NOx hydrocarbons or combinations thereof.

18. An additive composition containment device for an engine oil lubricating system comprising a housing and a container with an additive composition, and wherein the additive composition comprises a dispersants and an antioxidant~~for the reduction of soot from lubricating systems, engine emissions reduction or combinations thereof.~~

wherein antioxidant is selected from the group comprising the antioxidants include but are not limited to alkyl-substituted phenols such as 2, 6-di-tertiary butyl-4-methyl phenol, phenate sulfides, phosphosulfurized terpenes, sulfurized esters, aromatic amines, and hindered phenols, is a hindered, ester-substituted phenol and combinations thereof; and

wherein the dispersant is selected from the group comprising ashless type dispersants such as Mannich dispersants; polymeric dispersants; carboxylic dispersants, amine dispersants, high molecular weight esters, and the like; succinics, esterfied maleic anhydride styrene copolymers; maleated ethylene diene monomer copolymers; surfactants; emulsifiers; ashless succinimide, polyisbutenyl succinimide, substituted long chain alkenyl succinimides, high molecular weight esters, N-substituted long chain alkenyl succinimides, decyl methacrylate, vinyl decyl ether, aminoalkyl acrylates, acrylamides, poly-(oxyethylene)-substituted acrylates, high molecular weight olefins with monomers containing polar substitutes; functionalized derivatives of each component listed herein; and combinations thereof;

resulting in the reduction of soot from lubricating systems, engine emissions reduction or combinations thereof.